

## General Description

The smart TBRG Counter TW-371D is specially designed for precise calibration and field maintenance of tipping bucket rain gauge. TW-371D provides not only the tip counting data but also the timely message for checking whether the gauge functions correctly. More accuracy could be determined based on three strings of stored calibration data at different flow rate or repeated field tests.

The battery powered TW-371D could be stayed in standby mode for data recall. It connects with the gauge to execute both the indication and time counting when water dripping starts. When the tip occurs, the LCD displays the number of tips, the time interval and the switch closure duration. If no more tipping occurs within a preset timeframe, the Counter will display the total number of tips and the last 5 time intervals before automatic termination and the data can be recalled by pushing the Check button.

The result of comparing the recorded counts with the desired tips could be a reference to the test for checking whether no adjustment is required. Observing the conformity of the consequent intervals could be considered as another reference for buckets status whether they are positioned evenly. Both mentioned above are associated with the adjustment of bucket settings. Moreover, the time interval could be applied to converting to the rainfall intensity. Even the condition of TBRG could be noticed before it becomes defective by checking the contact closure duration whether it is out of normal band e.g.  $100 \pm 50$ ms.

When TW-371D works with the Precise Calibrator TW-271C, due to the cylinder makes the longer tipping time for last tipping, 0.1~0.9 tips which is equal to the remaining water in the bucket could be estimated by checking the last two intervals. And the value of high resolution is obtained. Equipped with a RS-232 port, all counting messages of TW-371D could be transferred to PC for further data processing.



## Features

1. Large LCD display is useful in the field for easy operation and quick verifications.
2. Timely messages show the total number of tips, the duration of contact closure and the time intervals between tips.
3. Check the consequent intervals to see whether the gauge is positioned properly.
4. Check the duration of contact closure to see whether the output of gauge is accepted.
5. Three strings of calibration data are sufficient to support the field verifications.

## Specifications

Count input	Reed Switch contact, 10~250ms
Display	4 digit LCD, 10mm height
Data display	Total counts, Time intervals and Closure duration
Power	DC 4.5V, Battery AA type x3
Power consumption	5mA active, 80uA standby
Data output	RS-232, 9600bps, ASCII strings
Operating temperature	-10°C ~ +60°C
Dimension	Body--120x70x27mm (H x W x D)

Preliminary version, subject to change